TABLE C.1
HUMAN HEALTH CONCEPTUAL SITE MODEL
OPERABLE UNIT 1 PARCELS
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

PRIMARY SOURCE	release mechanism	SECONDARY SOURCE	release mechanism	TERTIARY SOURCE	release mechanism	EXPOSURE ROUTE	RECEPTOR CHARACTERIZATION
							POTENTIALLY EXPOSED RECEPTORS (HUMAN HEALTH - BASELINE CONDITIONS)
							OU1 Parcels: Residents [1] / Site Workers / Temporary Workers / Trespassers; OU2 Parcels (Excluding Quarry Pond): Residents [1] / Site Workers / Temporary Workers / Trespassers; OU2 Quarry Pond: Temporary Workers / Trespassers; Off-site properties: Residents / workers / Temporary Workers / Trespassers; GMR / floodplain: Recreation users / Temporary Workers
SURFACE AND SUBSURFACE LANDFILL CONTENTS (within OU1 Parcels)	direct contact					INCIDENTAL INGESTION DERMAL CONTACT	-- X X X X X X X X na na X X X X X
	waste decomposition/ volatilization	LANDFILL / SUBSURFACE GAS / VAPOR	subsurface migration	INDOOR AIR		INHALATION OF VAPORS (and accumulation of explosive gas)	-- X -- -- -- X -- -- -- -- X -- -- -- --
			discharge to atmosphere	AMBIENT AIR	dispersion	INHALATION OF VAPORS	-- X X X -- X X X X X X X X X X
	volatilization/ wind erosion	AMBIENT AIR/ FUGITIVE DUST	dispersion/deposition			INHALATION OF VAPORS/ PARTICULATES INCIDENTAL INGESTION DERMAL CONTACT	-- X X X -- X X X X X X X X X X
	storm water runoff	SURFACE WATER i.e., intermittent drainage pathways	direct contact			INCIDENTAL INGESTION DERMAL CONTACT	-- X X X -- X X X -- -- X X X X X
		SEDIMENTS i.e., intermittent drainage pathways	direct contact			INCIDENTAL INGESTION DERMAL CONTACT	-- X X X -- X X X -- -- X X X X X
	storm water runoff	PONDS i.e., existing intermittent ponds	water circulation	SURFACE WATER	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	-- X X X -- na na na na na na na na na na
			sedimentation	SEDIMENT	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	-- X X X -- na na na na na na na na na na
			recharge to gw	GROUNDWATER see below			
	infiltration / leaching	GROUNDWATER	migration to water wells			INGESTION DERMAL CONTACT INHALATION OF VAPORS	-- X -- -- -- -- -- -- -- -- X -- -- -- --
			migration/discharge	SURFACE WATER Quarry Pond	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	na na na na na na na na X X na na na na na
			migration/discharge	SURFACE WATER Great Miami River	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	na na na na na na na na na na na na na X X
			volatilization and subsurface migration	INDOOR AIR		INHALATION OF VAPORS	-- X -- -- -- X -- -- -- -- X -- -- -- --
			volatilization to atmosphere	AMBIENT AIR	dispersion	INHALATION OF VAPORS	-- X X X -- X X X -- -- X X X X X
			direct contact	GROUNDWATER	direct contact	INGESTION DERMAL CONTACT INHALATION OF VAPORS	-- X X X -- X X X -- -- X X X X X

LEGEND

--	incomplete exposure pathway e.g., due to absence of exposure route and/or receptor
na	not applicable due to spatial separation
[1]	Respondents intend to put institutional controls, in the form of an environmental covenant in place for OU2, which would restrict residential use.
X	potentially complete exposure pathway to be evaluated/addressed as part of OU1
X	pathway to be addressed as part of vapor intrusion studies (and subject to OU2 groundwater assessment for off-site areas)
X	potentially complete exposure pathway to be evaluated for OU2

TABLE C.2
HUMAN HEALTH CONCEPTUAL SITE MODEL
OPERABLE UNIT 2 PARCELS
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

PRIMARY SOURCE	release mechanism	SECONDARY SOURCE	release mechanism	TERTIARY SOURCE	release mechanism	EXPOSURE ROUTE	RECEPTOR CHARACTERIZATION: POTENTIALLY EXPOSED RECEPTORS (HUMAN HEALTH - BASELINE CONDITIONS)															
							OU1 Parcels				OU2 Parcels (excluding Quarry Pond)				OU2 Quarry Pond		Off-site properties			GMR / floodplain		
							Residents [1]	Site workers	Temporary Workers	Trespassers	Residents [1]	Site Workers	Temporary Workers	Trespassers	Temporary Workers	Trespassers	Residents / workers	Temporary Workers	Trespassers	Recreation users	Temporary Workers	
SURFACE AND SUBSURFACE LANDFILL CONTENTS (within OU2 Parcels)	direct contact					INCIDENTAL INGESTION DERMAL CONTACT	na	na	na	na	--	X	X	X	X	X	na	na	na	X	X	
	volatilization	SUBSURFACE GAS / VAPOR	subsurface migration	INDOOR AIR		INHALATION OF VAPORS (and accumulation of explosive gas)	--	X	--	--	--	X	--	--	--	--	X	--	--	--	--	
			discharge to atmosphere	AMBIENT AIR	dispersion	INHALATION OF VAPORS	--	X	X	X	--	X	X	X	X	X	X	X	X	X	X	
	volatilization/ wind erosion	AMBIENT AIR/ FUGITIVE DUST	dispersion/deposition			INHALATION OF VAPORS/ PARTICULATES INCIDENTAL INGESTION DERMAL CONTACT	--	X	X	X	--	X	X	X	X	X	X	X	X	X	X	
	storm water runoff	SURFACE WATER i.e., intermittent drainage pathways	direct contact			INCIDENTAL INGESTION DERMAL CONTACT	--	--	--	--	--	X	X	X	--	--	X	X	X	X	X	
		SEDIMENTS i.e., intermittent drainage pathways	direct contact			INCIDENTAL INGESTION DERMAL CONTACT	--	--	--	--	--	X	X	X	--	--	X	X	X	X	X	
	storm water runoff	QUARRY POND	water circulation	SURFACE WATER	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	--	--	--	--	--	--	--	--	X	X	--	--	--	--	--	
			sedimentation	SEDIMENT	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	--	--	--	--	--	--	--	--	X	X	--	--	--	--	--	
			recharge to gw	GROUNDWATER see below																		
	infiltration / leaching	GROUNDWATER	migration to water wells			INGESTION DERMAL CONTACT INHALATION OF VAPORS	--	X	--	--	--	--	--	--	--	--	X	--	--	--	--	
			migration/discharge	SURFACE WATER Quarry Pond	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	na	na	na	na	na	na	na	na	X	X	na	na	na	na	na	
			migration/discharge	SURFACE WATER Great Miami River	direct contact	INCIDENTAL INGESTION DERMAL CONTACT INHALATION OF VAPORS	na	na	na	na	na	na	na	na	na	na	na	na	na	X	X	
			volatilization and subsurface migration	INDOOR AIR		INHALATION OF VAPORS	--	X	--	--	--	X	--	--	--	--	X	--	--	--	--	
			volatilization to atmosphere	AMBIENT AIR	dispersion	INHALATION OF VAPORS	--	X	X	X	--	X	X	X	--	--	X	X	X	X	X	
			direct contact	GROUNDWATER	direct contact	INGESTION DERMAL CONTACT INHALATION OF VAPORS	--	X	X	X	--	X	X	X	--	--	X	X	X	X	X	

LEGEND

--	incomplete exposure pathway e.g., due to absence of exposure route and/or receptor
na	not applicable due to spatial separation
[1]	Respondents intend to put institutional controls, in the form of an environmental covenant in place for OU2, which would restrict residential use.
X	potentially complete exposure pathway to be evaluated/addressed as part of OU1
X	pathway to be addressed as part of vapor intrusion studies (and subject to OU2 groundwater assessment for off-site areas)
X	potentially complete exposure pathway to be evaluated for OU2

TABLE C.3
ECOLOGICAL CONCEPTUAL SITE MODEL
OPERABLE UNIT 1 AND 2 PARCELS
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

PRIMARY SOURCE	release mechanism	SECONDARY SOURCE	release mechanism	TERTIARY SOURCE	release mechanism	EXPOSURE ROUTE	RECEPTOR CHARACTERIZATION

							POTENTIALLY EXPOSED RECEPTORS (ECOLOGICAL / HUMAN HEALTH - BASELINE CONDITIONS)											
							OU1 Parcels		OU2 Parcels (excluding Quarry Pond)		OU2 Quarry Pond			Off-site properties		Great Miami River / floodplain		
							Terrestrial Biota	Aquatic Biota	Terrestrial Biota	Aquatic Biota	Terrestrial Biota	Aquatic Biota	Humans that consume fish	Terrestrial Biota	Aquatic Biota	Terrestrial Biota	Aquatic Biota	Humans that consume fish
SURFACE LANDFILL CONTENTS (within OU1 Parcels)	direct contact					INGESTION	X	X	na	na	na	na	na	na	na	na	na	na
	plant uptake	VEGETATION	direct contact			INGESTION	X	X	na	na	na	na	na	na	na	na	na	na
	stormwater runoff	SURFACE WATER AND SEDIMENT	direct contact			INGESTION	X	X	(a)	(a)	(a)	(a)	--	X	X	X	X	--
			direct contact	AQUATIC ORGANISMS		INGESTION	X	X	(a)	(a)	(a)	(a)	--	X	X	X	X	X
SURFACE LANDFILL CONTENTS (within OU2 Parcels)	direct contact					INGESTION	na	na	X	--	--	X	--	na	na	na	na	na
	plant uptake	VEGETATION	direct contact			INGESTION	na	na	X	--	--	X	--	na	na	na	na	na
	stormwater runoff	SURFACE WATER AND SEDIMENT	direct contact			INGESTION	(a)	(a)	X	X	--	--	--	X	X	X	X	--
			direct contact	AQUATIC ORGANISMS		INGESTION	(a)	(a)	X	X	--	--	--	X	X	X	X	X
	stormwater runoff and infiltration	QUARRY POND	direct contact			INGESTION	na	na	na	na	X	X	--	na	na	na	na	na
			direct contact	AQUATIC ORGANISMS		INGESTION	na	na	na	na	X	X	X	na	na	na	na	na

LEGEND

--	incomplete exposure pathway e.g., due to absence of exposure route and/or receptor
na	not applicable due to spatial separation
(a)	potential cross-boundary effects between OU1 Parcels and OU2 Parcels will be considered in the OU2 RI/FS
X	potentially complete exposure pathway to be evaluated/addressed as part of OU1
X	potentially complete exposure pathway to be evaluated for OU2

CONCEPTUAL SITE MODEL NOTES
OPERABLE UNIT 1 AND 2 PARCELS
SOUTH DAYTON DUMP AND LANDFILL SITE
MORAINE, OHIO

Notes

1 OU1 includes the following parcels:

- Parcel 5054 (Valley Asphalt)
- Parcels 5171, 5172, 5173, 5174, 5175, 5176 (Boesch and Grillot)
- Parcel 5177 including road easement but excluding water and submerged portions of the Quarry Pond (Boesch and Grillot)
- Parcel 3278, 3058, 3057, and 3056 including embankments [owned by the MCD] onto which waste extends
- Part of Parcel 5178 containing north Quarry Pond embankment (Boesch and Grillot)

Collectively, these parcels comprise the presumptive remedy area (PRA).

2 OU2 includes the following areas or media, which are not part of OU1:

- Landfill material, surface and subsurface soil, groundwater, and air outside the OU1 Area attributable to historic Site operations
- Parcel 3274 and parts of Parcels 5177 and 5178 not addressed in OU1, including submerged portions of the Quarry Pond
- Portions of Parcel 3275 upon which waste has been placed (owned by MCD)
- Parcels 3753, 4423, 4610, and 3252, including active businesses along the southeast portion of the Site
- Shallow groundwater (i.e., nominally at elevations above 675 feet above mean sea level [ft AMSL]), outside the OU1 Area
- Deeper groundwater (i.e., nominally at elevations below 675 ft AMSL), outside the OU1 Area
- Leachate outside the OU1 Area (e.g., the floodplain area between the Site and the GMR
- Landfill gas (LFG) and soil vapor outside the OU1 Area
- Surface water and sediment outside the OU1 Area (e.g., in the Quarry Pond and in the GMR adjacent to and downstream of the Site)
- Air outside the OU1 Area

[1] The MCD defines a floodplain as a strip of relatively flat and normally dry land alongside a stream, river or lake that is covered by water during a flood. The floodplain area between the Site and the GMR is not the same as the 10C-year floodway and 100-year floodplain areas at the Site based on Federal Emergency Management Agency (FEMA) flood insurance maps, which are more extensive than the MCD definition.